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Editorial

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This special issue offers a selection of articles on urban transit and light rail system research-orientated studies. It was produced as a result of the RailNewcastle Scientific Conference 2015, organized by NewRail at Newcastle University. The material presented in this special issue can be used as a main source for transport research and teaching material. It begins with a paper on the circumvention of barriers to urban rail energy efficiency, offering a discussion on the energy efficiency requirements of various stakeholders, and how the success of future energy efficiency projects can be ensured.

Public perception of driverless trains is the next topic regarded in this collection of conference articles. Specifically, automation of metro systems is discussed with a particular focus on in unattended train operation (UTO).

This special issue also includes a simulation study on testing the efficacy of platform and train passenger boarding, alighting and dispersal through innovative 3D agent-based modelling techniques (ABM). As a result, a tool for the development of station infrastructure, train carriage design with implications on timetabling and network planning is offered.

A discussion on passenger stability within moving railway vehicles follows. Limits on maximum longitudinal acceleration are discussed. The Tyne and Wear Metro system has been observed to gather data on typical acceleration levels. The data collected are compared against the literature. The analyses revealed that fine control of the acceleration/jerk profile may improve the trade-off between journey times, energy consumption and passenger comfort.

Next study presented in this special looks also at the practices of Tyne and Wear Metro system. This time the attitude of metro drivers are explored. For data collection, a self-administered questionnaire distributed among the drivers has been used. The results from an implemented multivariate analysis showed a correlation between the driver responses and historical incident data with regard to significant risks for propagation of incidences during engineering works on metro lines and sites.

A study on transgressor behaviour at urban level crossings in Australia is also presented. Direct observations were organized at three black spot urban level crossings during morning and afternoon peak hours. Younger adults appear to be the most frequent transgressors as school children and elderly seem to be more likely to transgress the urban level crossings in groups.

A comparative assessment analysis of virtual track circuit as an alternative to the classical solution for using track circuit to detect a tram or a light train in black spots such as urban tunnels, bridges and low visual contact in a rail network is offered. The solution proposed looks promising and it is worth considering.

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